The Central Processing Unit (CPU) is the brain of the computer--it is the 'compute' in computer. Modern CPU's are what are called 'integrated chips'. The idea of an integrated chip is that several processing components are integrated into a single piece of silicon. Without the CPU, you have no computer. The CPU is composed of thousands (and soon billions) of transistors.

Each transistor is a set of inputs and outputs. When the inputs receive electricity, the combined charge changes the state of the transistor internally and you get a result out the other side. This simple effect of the transistor is what makes it possible for the computer to count and perform logical operations, all of which we call *processing.*

A CPU usually contains an execution core with two or more pipelines, a data and address bus, a dedicated arithmetic logic unit (ALU, also called the math co-processor), and in some cases special high-speed memory for caching program instructions from RAM.

The CPU's in most PC's and servers are general purpose integrated chips composed of several smaller dedicated-purpose components which together create the processing capabilities of the modern computer.

For example, Intel makes a Pentium, while AMD makes the Athlon, and Duron (no memory cache).

